

## CLIMATE AND CROP SERVICE.

By JAMES BERRY, Chief of Climate and Crop Service Division.

The following extracts in regard to the general weather conditions in the several States and Territories are taken from the monthly reports of the respective services.

Snowfall and rainfall are expressed in inches.

**Alabama.**—The mean temperature was 48.0°, or 1.2° below the normal. The highest was 77°, at Alco on the 1st, and the lowest, 8°, at Decatur and Scottsboro on the 21st. The average precipitation was 5.86, or 1.19 above normal. The greatest monthly amount was 13.40, at Brewton, and the least, 2.36, at Sturdevant. Excessive rains fell on the 5th and 6th; Brewton reported 8.80 in twenty-four hours, and Alco 7.70 in the same length of time.

**Arizona.**—The mean temperature was 50.0°, or 2.0° above normal. The highest was 95°, at Maricopa on the 28th, and the lowest, 0°, at Flagstaff on the 4th. The average precipitation was 0.28, or 0.92 less than normal. The greatest amount occurred in the San Simon Valley, while none fell in the Antelope, Big Sandy, and Colorado valleys.

**Arkansas.**—The mean temperature was 45.2°, or 1.8° above normal. The highest was 79°, at Elon on the 26th and 29th, and at Rison on the 29th, and the lowest, 11°, at Pocahontas on the 20th. The average precipitation was 3.30, or 1.20 less than normal. The greatest monthly amount was 7.69, at Arkansas City, and the least, 1.44, at Conway.

**California.**—The mean temperature was 52.0°, or 3.2° above normal. The highest was 103°, at Ogilby on the 28th, and the lowest 12°, below zero, at Bodie on the 7th. The average precipitation was 0.35, or 3.21 below normal. The greatest monthly amount was 7.39, at Crescent City, and the least, 0.00, at numerous places.

**Colorado.**—The month was unusually warm over the entire State. The highest temperature was 77°, at Minneapolis on the 28th, and the lowest, 29° below zero, at Gunnison on the 6th. The average precipitation was 0.62, or about 0.50 less than normal. The greatest monthly amount was 5.50, at Ruby, and the least "traces," at several stations.

**Florida.**—The mean temperature was 61.0°, or 1.0° below normal. The highest was 85°, at Avon Park on the 5th and 13th, and at Lemon City on the 8th; the lowest, 24°, at Milton on the 18th. The average precipitation was 3.06, or 0.09 below normal. The greatest monthly amount was 7.31, at Kissimmee, and the least, 1.60, at Brooksville.

**Georgia.**—The mean temperature was 48.2°, or about 2° below normal. The highest was 79°, at Flemington on the 2d, and the lowest, 3°, at Diamond on the 21st. The average precipitation was 5.55, ranging from 9.77 at Poulton to 2.14 at Gillsville; it was a little more than an inch above the normal.

**Idaho.**—The mean temperature was 29.9°, or 3.3° higher than in February of last year. The highest was 76°, at Orchard on the 21st, and the lowest, 17° below zero, at Swan Valley on the 7th. The average precipitation was 1.02. The greatest monthly amount was 3.59, at Murray, and the least, 0.03, at Burnside.

**Illinois.**—The mean temperature was 31.0°, or 1.6° above normal. The highest was 76°, at Muddy Valley, and the lowest, 18° below zero, at Ashton. The average precipitation was 1.87, or 1.14 below normal. The greatest monthly amount was 3.48, at Chicago, and the least, 0.74, at Dixon.

**Indiana.**—The mean temperature was 32.0°, or 1.1° above normal. The highest was 71°, at Worthington on the 27th, and at Vincennes on the 28th, and the lowest, 12° below zero, at Hammond on the 20th. The average precipitation was 2.14, or 1.34 less than normal. The greatest monthly amount was 4.45, at Marengo, and the least, 0.67, at Logansport.

**Iowa.**—The mean temperature was 27.4°, or about 5° above normal. The highest was 78°, at Glenwood and Omaha on the 26th, and the lowest, 13° below zero, at Cresco on the 20th, and at Wilton on the 17th. The average precipitation was 0.71. The greatest monthly amount was 2.40, at Ottumwa, and the least, 0.04, at Spencer.

**Kansas.**—The mean temperature was 37.9°, or 6.7° above normal. The highest was 86°, at Burlington on the 26th, and the lowest, 1°, at the Agricultural College on the 8th. The average precipitation was 0.27, or 0.85 below the normal. The greatest monthly amount was 1.03. At Fort Scott, Coldwater, Coolidge, Garden City, Gove, Meade, and Tribune no snow or rain fell.

**Kentucky.**—The mean temperature was 37.8°, or about 0.4° below normal. The highest was 81°, at Prysorsburg on the 27th, and the lowest, 12° below zero, at Sandyhook on the 21st. The average precipitation was 3.06, or 0.10 below normal. The greatest amount was 4.45, at Franklin, and the least, 1.32, at Fords Ferry.

**Louisiana.**—The mean temperature was 53.0°, or 1.4° below the normal. The highest was 80°, at Baton Rouge on the 1st, and the lowest, 20°, at Opelousas on the 9th. The average precipitation was 6.08, or 1.38 above normal. The greatest monthly amount was 14.11, at Alexandria, and the least, 2.30, at Venice. Compared with former years, the month shows the heaviest average rainfall on record for February in north Louisiana.

**Maryland.**—The mean temperature was 34.6°, or 1.3° above normal. The highest was 66°, at Pocomoke City on the 29th, Milford, Del., on the 6th, and Millsboro, Del., on the 28th, and the lowest, 12° below zero, at Sunnyside on the 17th. The average precipitation was 5.41, or 2.30 above normal. The greatest monthly amount was 7.48, at Annapolis, and the least, 2.40, at Western Port.

**Michigan.**—The mean temperature was 22.8°, or 1.1° below normal. The highest was 63°, at Adrian on the 27th, and the lowest, 29° below zero, at Grayling on the 17th. The average precipitation was 1.31, or 1.36 below normal. The greatest monthly amount was 3.50, at Benton Harbor, and the least, 0.38, at Sandbeach.

**Minnesota.**—The mean temperature was 17.9°. The highest was 73°, at Pleasant Mound on the 26th, and the lowest, 39° below zero, at Tower on the 16th. The average precipitation was 0.39. The greatest monthly amount was 1.90, at Bemidji, and the least, a "trace," at Argyle and Bonniwell.

**Mississippi.**—The mean temperature was 49.7°, or 0.8° below normal. The highest was 86°, at Jackson on the 3d, and the lowest, 13°, at Fulton on the 21st. The average precipitation was 7.79, or 2.48 above normal. The greatest monthly amount was 12.94, at Louisville, and the least, 2.59, at Pearlinton.

**Missouri.**—The mean temperature was 35.5°, or 3.2° above normal. The highest was 81°, at Harrisonville on the 26th, and at Zeitonville on the 27th, and the lowest, 10° below zero, at Unionville on the 20th. The average precipitation was 1.59, or 0.96 below normal. The greatest monthly amount was 4.00, at Poplarbluff, and the least, 0.22, at Mount Vernon.

**Montana.**—The average temperature was 31.0°, or about 15° above normal. The highest was 70°, at Billings and Greatfalls on the 19th, and at Wibaux on the 25th, and the lowest, 21° below zero, at Fort Benton on the 13th. The average precipitation was 0.50, or 0.02 above normal. The greatest monthly amount was 2.53, at Troy, and the least, a "trace," at Fort Benton.

**Nebraska.**—The mean temperature was 32.7°, or 13.9° above normal. The highest was 82°, at Wilber on the 26th, and the lowest, 6° below zero, at Bassett and Kennedy on the 29th. The average precipitation was 0.16, or 0.55 below normal. The greatest monthly amount was 1.25, at Geneva. No precipitation occurred at several stations.

**Nevada.**—The mean temperature was 35.4°, or 4.7° above normal. The highest was 80°, at Hamilton on the 12th, and the lowest, 12° below zero, at Stofiel on the 5th. The average precipitation was 0.22, or 0.82 below normal. The deficiency was a marked one all over the State, and was unprecedented. The greatest monthly amount was 1.62, at Clover Valley, while there was none at several stations.

**New England.**—The month was rough and stormy, with damaging floods, heavy snows, and an excess of rainy and cloudy weather. The highest temperature was 57°, at Amherst, Mass., on the 29th, and the lowest, 42° below zero, at West Milan, N. H., on the 18th. The greatest monthly precipitation was 9.25 at Waterbury, Conn., and the least, 1.83, Cornwall, Vt.

**New Jersey.**—The mean temperature was 32.1°, or 0.6° above the normal. The highest temperature was 62°, at Billingsport on the 6th, at Imlaystown and Beverly on the 28th, and the lowest, 12° below zero, at Somerville on the 17th. The average precipitation was 6.77, or 3.31 above normal. The greatest monthly amount was 10.06, at Charlotteburg, and the least, 4.82, at Cape May Courthouse.

**New Mexico.**—The month averaged about the normal in temperature and a trifle below in amount of precipitation. The highest temperature recorded was 80°, at Roswell on the 28th, and the lowest, 16° below zero, at Labelle on the 7th. The greatest monthly precipitation was 2.10, at Chama; Engle reports no precipitation, while several stations had only a "trace."

**North Carolina.**—The mean temperature was 42.8°, or 0.8° below normal. The highest was 76°, at Newbern on the 2d, and Falkland on the 13th, and the lowest, 10° below zero, at Bakersville on the 21st. The average precipitation was 5.64, or 1.37 above normal. The greatest monthly amount was 9.40, at Oakridge, and the least, 3.68, at Greenville.

**North Dakota.**—The mean temperature was 14.3°, the highest on record. The highest was 64°, at Power on the 26th, and the lowest, 29° below zero, at Milton on the 15th. The average precipitation was 0.44, or 0.10 below normal. The greatest monthly amount was 1.86, at Berlin, and the least, "trace," at McKinney.

**Ohio.**—The mean temperature was 30.5°, or 0.4° above normal. The highest was 78°, at Portsmouth on the 27th, and the lowest, 18°, below zero, at Oberlin on the 20th, and Hebbardsville on the 21st. The average precipitation was 2.21, or 1.31 below normal. The greatest monthly amount was 6.36, at Colebrook, and the least, 1.04, at Celina and Levering.

**Oklahoma.**—The mean temperature was 43.4°, or 3.3 above normal.

The highest was 78°, at Mangum on the 29th, and lowest, 8°, at Arapahoe on the 8th. The average precipitation was 0.66. The greatest monthly amount was 3.62, at Kemp, while no precipitation occurred at Buffalo.

*Oregon.*—The mean temperature was 43.1°, or 6.0° above normal; the highest mean for February on record. The highest temperature was 80°, at Langlois on the 19th, and the lowest, 0°, at Burns on the 29th. The average precipitation was 4.82, or 0.18 below normal. The greatest monthly amount, 19.34, occurred at Glenora, and the least, 0.09, at Silver Lake.

*Pennsylvania.*—The mean temperature was 29.4°, or 0.6° above normal. The highest was 65°, at Pittsburg on the 27th, and the lowest, 21° below zero, at Salem Corners on the 17th. The average precipitation was 4.90, or 1.67 above normal. The greatest monthly amount was 9.08, at Forks of Neshaminy, and the least, 1.94, at Altoona.

*South Carolina.*—The mean temperature was 48.2°, or 1.8° below normal. The highest was 81°, at Gillisonville on the 2d, and the lowest, 8°, Cheraw, Greenville, and Santuc on the 21st. The average precipitation was 6.13, or 2.47 above normal. The greatest monthly amount was 8.70, at Pinopolis, and the least, 3.55, at Port Royal.

*South Dakota.*—The mean temperature was 25.4°, or about 8° above normal. The highest was 79°, at Vermilion on the 26th, and the lowest, 28° below zero, at Ashcroft on the 29th. The average precipitation was 0.52, or about the normal. The greatest monthly amount, 3.48, occurred at Webster, and the least, "trace," at Brookings and Parkston.

*Tennessee.*—The mean temperature was 40.9°, or slightly less than normal. The highest was 75°, at Cookeville on the 29th, and the lowest, 3° below zero, at Bristol on the 20th. The average precipitation was 4.58, or about 0.75 below normal. The greatest monthly amount was 9.75, at St. Joseph, and the least, 1.88, at Covington.

*Texas.*—The temperature on an average for the State was 0.2° below normal. There was a general deficiency over the southern and western portions, while it was above normal over the northwestern portion. The temperature ranged from normal to 1.6° below, over east Texas, the coast district, and the western portion of southwest Texas, while there was an excess ranging from 0.1° to 1.9° over north and central Texas

and the eastern portion of southwest Texas, with the greatest excess in the vicinity of Abilene. Maximum, 92°, at Fort Brown on the 29th. Minimum 7°, at Hartley on the 8th, and at Happy on the 2d. The precipitation on an average for the State was 0.35 above the normal. There was a general excess over the northeastern portion of the State, which ranged from 0.16 to 0.75 over the eastern portions of north, central, and southwest Texas, and from 0.80 to more than 3.06 over east Texas, with the greatest in the vicinity of Marshall and Palestine. The precipitation was below normal over the other portions of the State. Greatest local monthly precipitation, 13.10, Marshall; least local monthly precipitation, "trace," at Chillicothe, Hartley, and Haskell.

*Utah.*—The mean temperature was 31.0°, which is above the average. The highest was 74°, at St. George on the 25th, 27th, and 28th, and the lowest, 16° below zero, at Soldier Summit on the 5th. The average precipitation was 0.46, or considerably below the normal. The greatest monthly amount was 3.10, at Promontory, while none occurred at Giles.

*Virginia.*—The mean temperature was 38.1°. The highest was 70°, at Norfolk and Sunbeam on the 13th, and at Ashland on the 23d, and the lowest, 10° below zero, at Bigstone Gap on the 21st. The average precipitation was 4.26. The greatest monthly amount was 6.89, at Cape Henry, and the least, 1.60, at Alexandria.

*Washington.*—The mean temperature was 40.8°, or 4.9° above normal. The highest was 76°, at Southbend on the 6th, and the lowest, 5°, at Hunters on the 10th. The average precipitation was 5.17, or 1.38 above normal. The greatest monthly amount was 17.50, at Neabbay, and the least, 0.17, at Sunnyside.

*West Virginia.*—The mean temperature was 33.4°, or about 2.0° below normal. The highest was 70°, at Creston and Hewett on the 27th, and the lowest, 15° below zero, at Spencer on the 20th. The average precipitation was 3.26, or slightly above the average. The greatest monthly amount was 6.23, at Creston, and the least, 1.50, at Green Sulphur Springs.

*Wisconsin.*—The mean temperature was 20.4°, or 3.3° above normal. The highest was 63°, at Port Washington on the 27th, and the lowest, 28° below zero, at Antigo on the 19th. The average precipitation was 0.48, or 1.06 below normal. The greatest monthly amount was 1.58, at Sharon, and the least, 0.10, at Osceola Mills and Spooner.

## METEOROLOGICAL TABLES.

By A. J. HENRY, Chief of Division of Records and Meteorological Data.

Table I gives, for about 130 Weather Bureau stations making two observations daily and for about 20 others making only the 8 p. m. observation, the data ordinarily needed for climatological studies, viz, the monthly mean pressure, the monthly means and extremes of temperature, the average conditions as to moisture, cloudiness, movement of the wind, and the departures from normals in the case of pressure, temperature, and precipitation.

Table II gives, for about 2,400 stations occupied by voluntary observers, the extreme maximum and minimum temperatures, the mean temperature deduced from the average of all the daily maxima and minima, or other readings, as indicated by the numeral following the name of the station; the total monthly precipitation, and the total depth in inches of any snow that may have fallen. When the spaces in the snow column are left blank it indicates that no snow has fallen, but when it is possible that there may have been snow of which no record has been made, that fact is indicated by leaders, thus (. . .).

Table III gives, for about 30 Canadian stations, the mean pressure, mean temperature, total precipitation, prevailing wind, and the respective departures from normal values. Reports from Newfoundland and Bermuda are included in this table for convenience of tabulation.

Table IV gives detailed observations at Honolulu, Republic of Hawaii, by Curtis J. Lyons, meteorologist to the Government Survey.

Table V gives, for 26 stations, the mean hourly temperatures deduced from thermographs of the pattern described and figured in the Report of the Chief of the Weather Bureau, 1891-'92, p. 29.

Table VI gives, for 26 stations, the mean hourly pressures as automatically registered by Richard barographs, except for

Washington, D. C., where Foreman's barograph is in use. Both instruments are described in the Report of the Chief of the Weather Bureau, 1891-'92, pp. 26 and 30.

Table VII gives, for about 130 stations, the arithmetical means of the hourly movements of the wind ending with the respective hours, as registered automatically by the Robinson anemometer, in conjunction with an electrical recording mechanism, described and illustrated in the Report of the Chief of the Weather Bureau, 1891-'92, p. 19.

Table VIII gives the danger points, the highest, lowest, and mean stages of water in the rivers at cities and towns on the principal rivers; also the distance of the station from the river mouth along the river channel.

Table IX gives, for all stations that make observations at 8 a. m. and 8 p. m., the four component directions and the resultant directions based on these two observations only and without considering the velocity of the wind. The total movement for the whole month, as read from the dial of the Robinson anemometer, is given for each station in Table I. By adding the four components for the stations comprised in any geographical division one may obtain the average resultant direction for that division.

Table X gives the total number of stations in each State from which meteorological reports of any kind have been received, and the number of such stations reporting thunderstorms (T) and auroras (A) on each day of the current month.

Table XI gives, for 38 stations, the percentages of hourly sunshine as derived from the automatic records made by two essentially different types of instruments, designated, respectively, the thermometric recorder and the photographic recorder. The kind of instrument used at each station is indicated in the table by the letter T or P in the column following the name of the station.